

ORIGINAL

**Survey and Documentation Services
12th Street Landfill Site
Wilmington, Delaware**

(Schnabel Reference 00151122)

**Schnabel 
Engineering**

Schnabel Engineering

Schnabel Engineering Associates, Inc.
510 East Gay Street
West Chester, PA 19380
610-696-6066 • Fax 610-696-7771

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June 4, 2001

Guardian Environmental Services, Inc.
1280 Porter Road
Bear, DE 19701

Attn: Mr. (b) (4)

Subject: Contract 00151122, Survey and Documentation
Services, 12th Street Landfill Site, Wilmington,
Delaware (Your P.O. #13047)

Gentlemen:

We are pleased to present this letter report for inspection services provided for the above mentioned project. These services were provided in accordance with our agreement dated August 8, 2000.

Personnel from our office conducted exterior post-construction surveys on three structures within 300 ft of the projected pile driving locations. This report consists of written notes, measurements, sketches, and photographs necessary to document the existing condition of each structure at the time of our survey.

The attached surveys were conducted in as complete and thorough a manner as possible in the time available. It is to be expected that due to time constraints and other circumstances, some existing conditions will go unnoticed and unnoted. Also, structures are dynamic in nature and, as such, are subject to a variety of internal and external forces, as is evidenced by the annotated pre-construction conditions. The forces acting upon a structure do not terminate upon the inception of pile driving operations in the area. For the aforementioned reasons, this post-construction survey can be used as a damage reference only if supported by seismographic or other geophysical data developed during construction.

The following structures were surveyed adjacent to proposed pile driving operations at the 12th Street Landfill Site:

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STRUCTURE	GENERAL BUILDING INFORMATION
Retaining Wall at 12 th Street Landfill, Wilmington, DE Structure #1	Concrete retaining wall facing W/SW, 150 x 8 ft high section of solid concrete was surveyed. It is approximately 20 inches wide at the top and tapers to the east. Structure is supported by wooden pilings. A variety of cracks and some erosion were noted on the concrete structure. Field Report, Drawings and Photographs – Attachment 2
Stone Wall Structure #2	Structure #2 is an old stone wall that is severely damaged. The structure is only visible when the river is at low tide. The structure for the most part has already fallen into the river. Photograph and Drawing – Attachment 3
Asset Recovery Services Warehouse Structure #3	Structure #3 is a single-level warehouse with aluminum siding supported on a concrete foundation. A variety of cracks was noted on the foundation wall of Structure #3. The aluminum siding of Structure #3 was also damaged in several places. Only the exterior of the building was surveyed. Field Report, Drawings and Photographs – Attachment 4

We have endeavored to provide the professional services as reported herein in accordance with generally accepted geoscience practice, and make no warranties, either express or implied, as to the services provided under the terms of this agreement and included herein.

We appreciate the opportunity to be of service to you on this project. Please feel free to contact us if you have any questions regarding this report.

Very truly yours,

SCHNABEL ENGINEERING ASSOCIATES, INC.

(b) (4)

Staff Geologist

(b) (4)

Senior Consultant

Schnabel Engineering Associates

Guardian Environmental Services, Inc.

June 4, 2001

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ORIGINAL

JTK:DAA:hcf

Attachments

- (1) Location Plan
- (2) Structure #1 Field Report, Drawings and Photographs
- (3) Structure #2 Photograph and Drawing
- (4) Structure #3 Field Report, Drawings and Photographs

cc: Guardian Environmental Services, Inc.

Attn: Mr. Robert Thom (1)

Attn: Mr. Tony Cooper (2)

ATTACHMENT 1

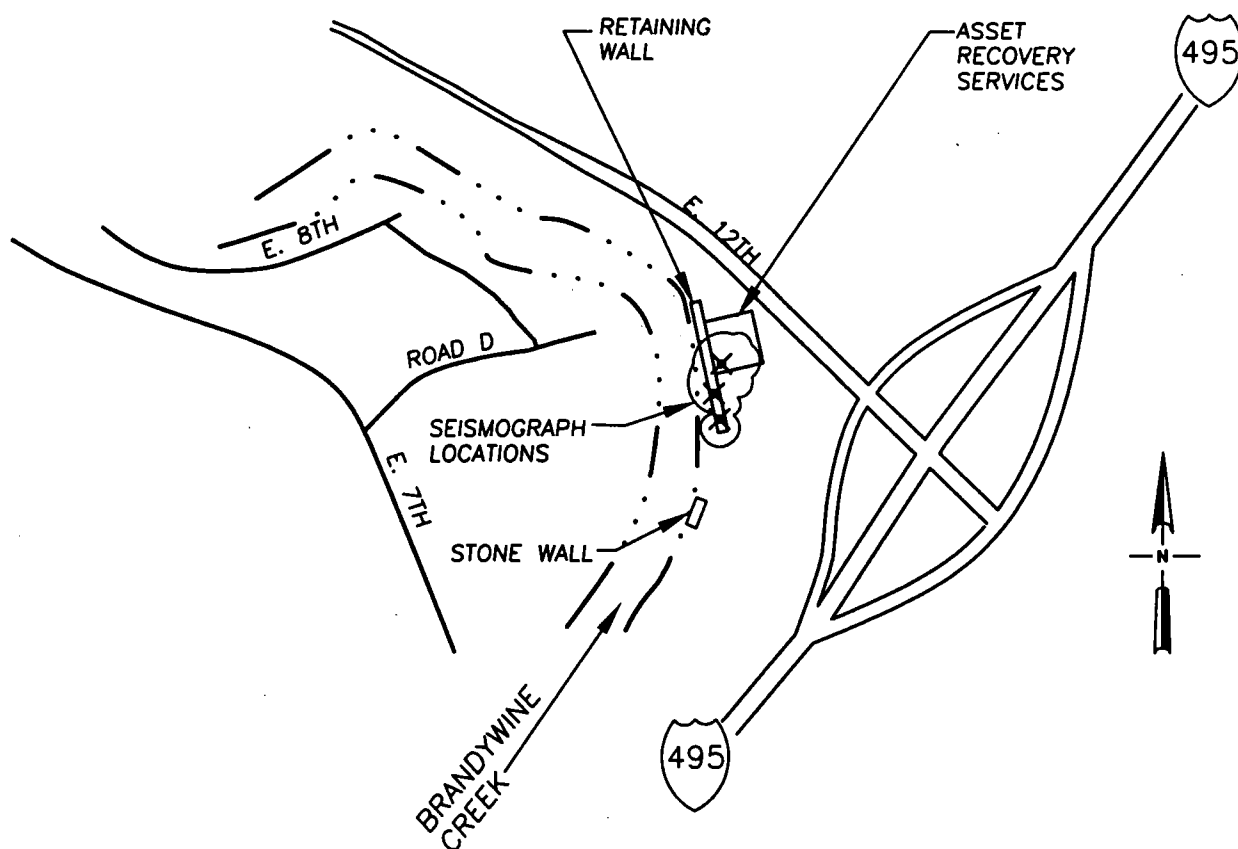
Location Plan

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SURVEY AND DOCUMENTATION SERVICES
12TH STREET LANDFILL SITE
WILMINGTON, DELAWARE
00151122

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LOCATION PLAN



GRAPHIC SCALE



1 inch = 1000 ft.

LEGEND

X APPROXIMATE SEISMOGRAPH LOCATION

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ATTACHMENT 2

Structure #1 Field Report, Drawings and Photographs

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**FIELD REPORT
EXISTING STRUCTURAL CONDITIONS**

SHEET 1 OF 8

ORIGINAL

CLIENT: GUARDIAN ENVIRONMENTAL LOCATION: 12TH ST. LANDFILL WILMINGTON
 (b) (4) JOB NO.: 00151122 PERMIT NO.:
 DATE: 3/14/01 TIME OF INSPECTION: 12:00 A.M. ☐ P.M. ☒
 COMPLETE ☐ INTERIOR ☐ EXTERIOR ☒ REFUSAL ☐ SURVEY DONE: BEFORE ☐ AFTER ☒ DURING ☐
 OCCUPANT: ASSET RECOVERY SERVICE OWNER ☐ TENANT ☒
 ADDRESS: 1330 E. 12TH ST. ESTIMATE - AGE 40+ YEARS
 OWNER & ADDRESS: BRANDYWINE INDUSTRIAL COMPLEX

GENERAL DESCRIPTION

FOUNDATION: CONCRETE ☒ CONC. BLOCK ☐ BRICK ☐ OTHER ☐
 HOUSE SIDING: BRICK ☐ WOOD ☐ ALUMINUM ☐ VINYL ☐ COMMENTS:
 ROOF: ASPHALT SHINGLE ☐ SLATE ☐ OTHER ☐ COMMENTS:
 CHIMNEY: BRICK ☐ BLOCK ☐ OTHER ☐ COMMENTS:
 NUMBER OF STORIES: 1 FILM ROLL NO.: 12 PICTURES
 PORCH: F ☐ S ☐ R ☐ HOUSE LENGTH: ~150 FT WIDTH:
 BROKEN GLASS: N ☐ E ☐ S ☐ W ☐ NATURE OF GROUND: ON RIVER
 SIDEWALKS: N ☐ E ☐ S ☐ W ☐ FLAT ☐ HILLY ☐ FILL ☐
 MORTAR JOINTS CRACKED: YES ☐ NO ☐ WATER PRESSURE: HIGH ☐ LOW ☐ MED ☐
 WATER: CITY ☐ WELL ☐ OTHER ☐ WATER QUALITY: CLEAR ☐ MILKY ☐ RUSTY ☐
 WALL HOUSE FACES: N ☐ E ☐ S ☐ W ☒ BASEMENT: YES ☐ NO ☐

DRAINAGE

GUTTERS: YES ☐ NO ☐ COMMENTS:
 DOWN SPOUT: YES ☐ NO ☐ COMMENTS:
 D.S. DRAINS TO: EARTH ☐ TROUGH ☐ CATCHBASIN ☐ SEWER ☐
 EROSION NEAR FOUNDATION WALL: YES ☒ NO ☐ COMMENTS:
 BUILDING SETTLED: YES ☒ NO ☐ COMMENTS:

COMMENTS: ONE STORY CONCRETE WALL FACING W/SW ON THE BRANDYWINE RIVER,
WALL IS APPROXIMATELY 8 FT. HIGH BY 150 FT LONG.

ALSO INSPECTED 30 FT. SECTION OF AN OLD STONE WALL RESTING ON THE RIVER

INSPECTOR: (b) (4) REVIEWED BY:

KEY OF SYMBOLS:

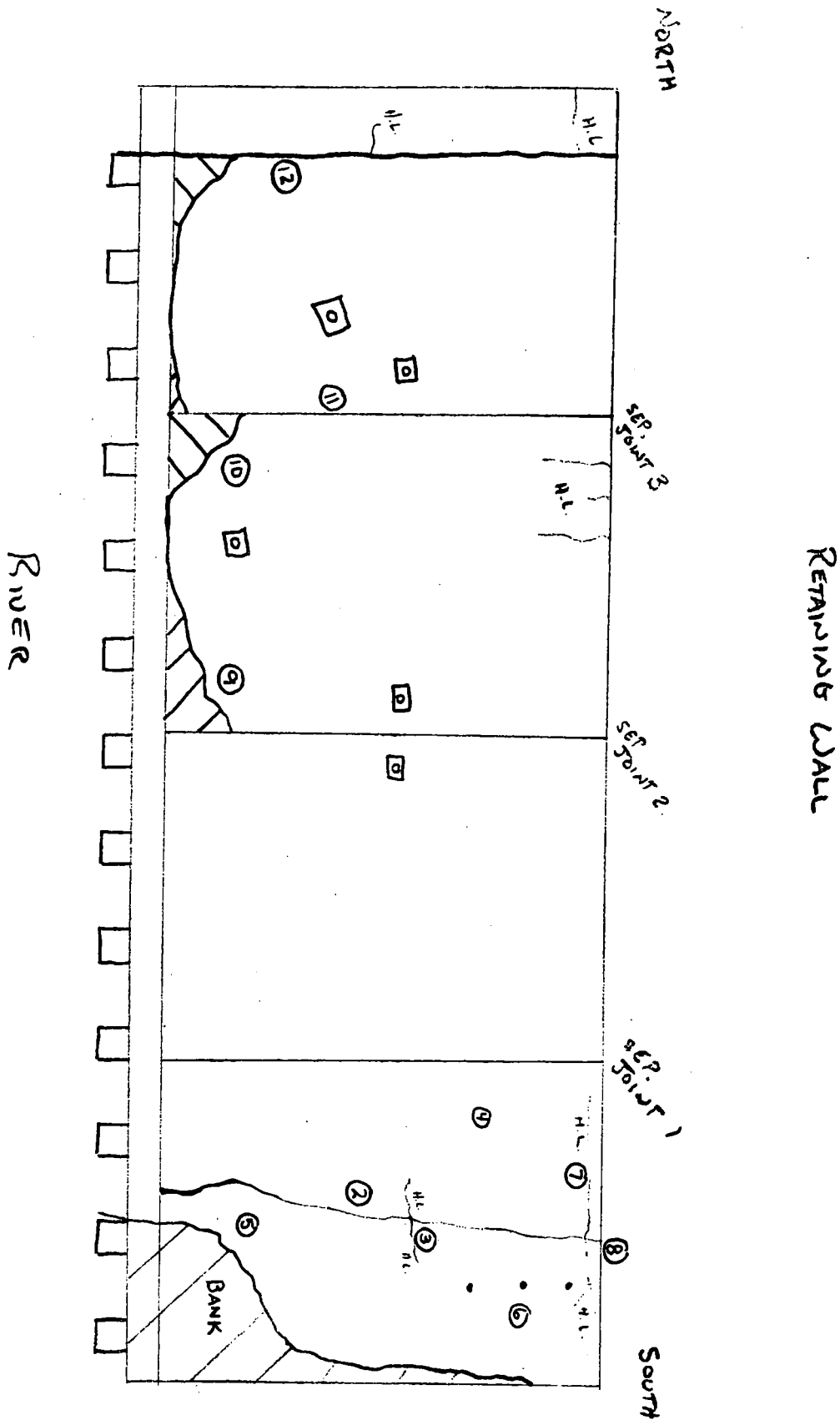
CRACK -	SEPARATION - SEP	UNEVEL FLOORS - UF	PLASTER - P
NAIL POP - NP	BAD SEAM - BS	BENT WALL - BW	FIREBOARD - FB
HAIRLINE - HL	UNEVEL CEILING - UC	SHEETROCK - SR	CONCRETE - CONC.
BUILDING - BLD	CONCRETE BLOCK - CONC. BL	CARPET - C	CRAZING - CR
SUSPENDED TILE - ST	BRICK - BK	FOUNDATION - FDN	SPALLING - SPL
ACOUSTICAL TILE - AT	PANELING - PL	BROKEN GLASS - BG	PEELING PAINT - PP
VINYL TILE - VT	WALLPAPER - WP	WATER STAIN - WS	
WOOD - WD	CERAMIC TILE - CT	MORTAR JOINT SEPARATION - MJS	

SCHNABEL ENGINEERING ASSOCIATES

BY DATE
CHKD. BY DATE
SUBJECT

SHEET NO. 2 OF 8
JOB NO.

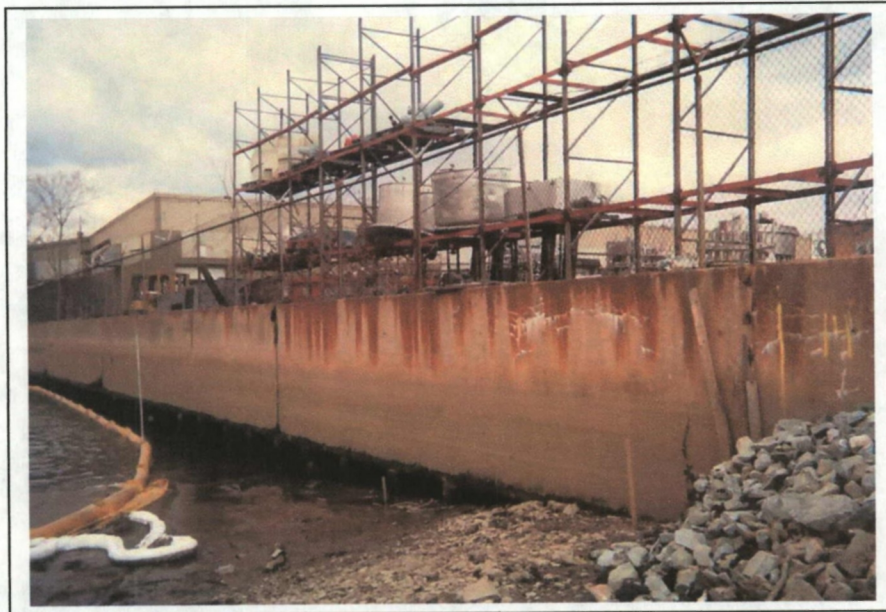
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Project Name: 12th St. Landfill
Location: Wilmington, DE
Job Number: 00151122

Photo Id: No. 1
Date 3/14/01

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Overview of the west face of the retaining wall looking north

Photo Id: No. 2
Date 3/14/01



Vertical crack that extends the entire height of the wall. Located 16 ft from the north end of the wall. ~ 7'6" high, 1/4" thick

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Photo Id: No. 3

Date 3/14/01

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Close up view of the upper portion of the 7/6" vertical crack. Rule used for scale. Two horizontal hairline cracks ~ 6" long

Photo Id: No. 4

Date 3/14/01



Discoloration – rust/lime corrosion of the wall

Photo Id: No. 5

Date 3/14/01

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Location where the first pile tied into the retaining wall

Photo Id: No. 6

Date 3/14/01



Left over burn marks at the points where the pile was bolted to the retaining wall

Photo Id: No. 7

Date 3/14/01



Horizontal H.L. crack extending north from 7'6" crack ~ 8' long, located 1" from top of the wall

Photo Id: No. 8

Date 3/14/01



Vertical crack extending across the top of the retaining wall and continuing down the back side. Located at the same point as the 7'6" crack on the reverse side

Photo Id: No. 9

Date 3/14/01

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Separation joint 2 and missing concrete at the base of the retaining wall

Photo Id: No. 10

Date 3/14/01

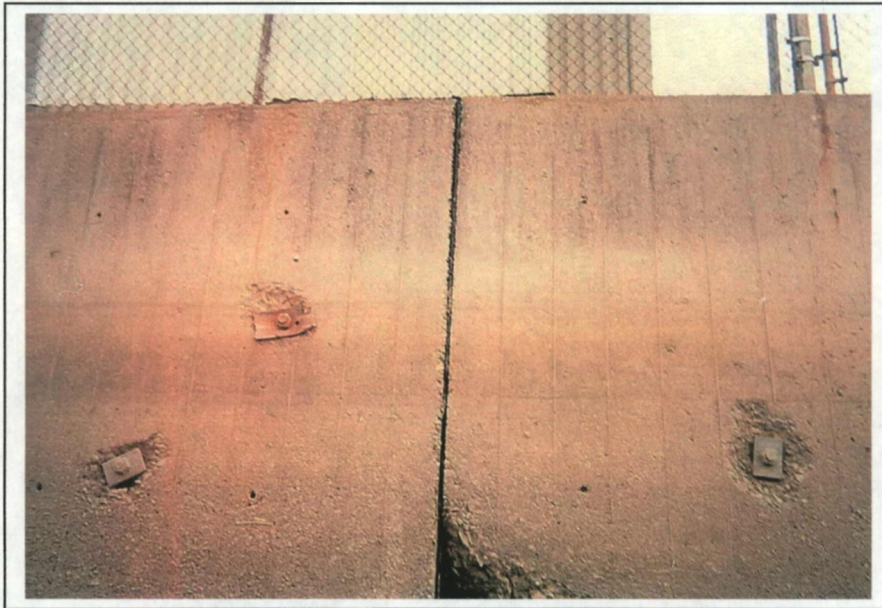


Separation joint 3 and missing concrete at the base of the retaining wall

Photo Id: No. 11

Date 3/14/01

ORIGINAL



Separation joint 3 and missing concrete around existing bolt locations

Photo Id: No. 12

Date 3/14/01



Large vertical separation at the north end of the retaining wall and missing concrete at the base of the wall.
Small H.L. cracks also noted

ATTACHMENT 3

Structure #2 Photograph and Drawing

SCHNABEL ENGINEERING ASSOCIATES

BY DATE

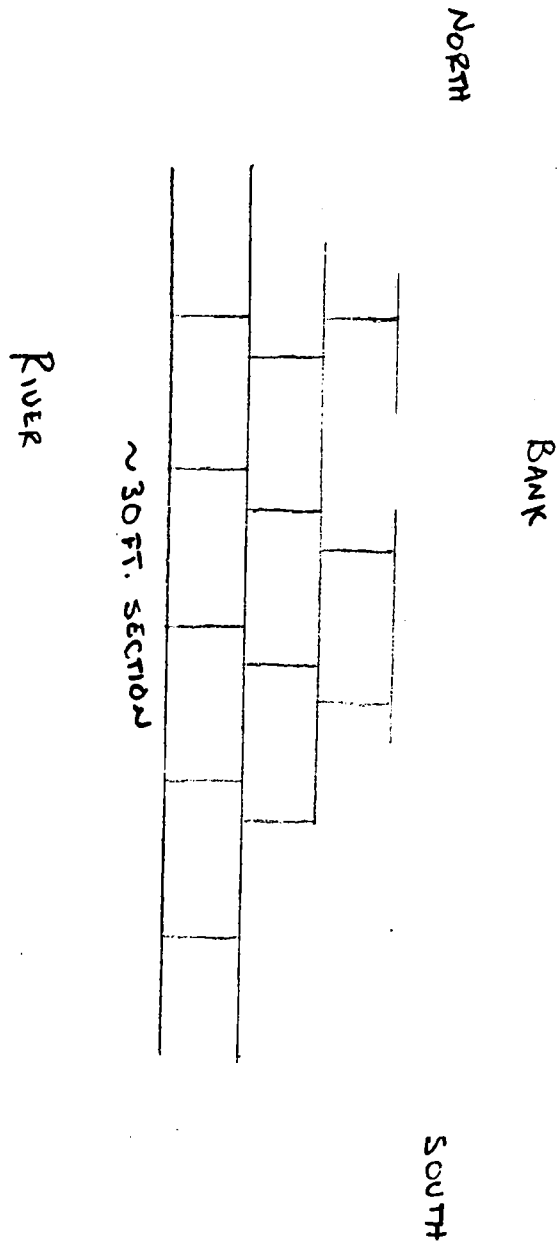
CHKD. BY DATE

SUBJECT

SHEET NO. 1 OF 2

JOB NO.

Original



Project Name: 12th St. Landfill
Location: Wilmington, DE
Job Number: 00151122

Photo Id: No. 1
Date 3/14/01

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Overview of the west face of the old stone wall (Structure #2)

ATTACHMENT 4

Structure #3 Field Report, Drawings and Photographs

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**FIELD REPORT
EXISTING STRUCTURAL CONDITIONS**

SHEET 1 OF 13

ORIGINAL

CLIENT: GAURDIAN ENVIRONMENTAL SERVICES LOCATION: 12TH ST. LANDFILL
 (b) (4) [REDACTED] JOB NO.: 00151122 PERMIT NO.:
 DATE: 3/14/01 TIME OF INSPECTION: 11:00 A.M. ☒ P.M. ☐
 COMPLETE ☐ INTERIOR ☐ EXTERIOR ☒ REFUSAL ☐ SURVEY DONE: BEFORE ☐ AFTER ☒ DURING ☐
 OCCUPANT: ASSET RECOVERY SERVICES OWNER ☐ TENANT ☒
 ADDRESS: 1330 E. 12TH ST ESTIMATE - AGE 25+ YEARS
 OWNER & ADDRESS: BRANDYWINE INDUSTRIAL COMPLEX

GENERAL DESCRIPTION

FOUNDATION: CONCRETE ☒ CONC. BLOCK ☐ BRICK ☐ OTHER ☐
 HOUSE SIDING: BRICK ☐ WOOD ☐ ALUMINUM ☒ VINYL ☐ COMMENTS:
 ROOF: ASPHALT SHINGLE ☐ SLATE ☐ OTHER ☐ COMMENTS: ALUMINUM (?)
 CHIMNEY: BRICK ☐ BLOCK ☐ OTHER ☒ COMMENTS: ALUMINUM
 NUMBER OF STORIES: ONE FILM ROLL NO.: 2
 PORCH: F ☐ S ☐ R ☐ HOUSE LENGTH: WIDTH: 100+ FT.
 BROKEN GLASS: N ☐ E ☐ S ☐ W ☐ NATURE OF GROUND: CONCRETE AND ASPHALT
 SIDEWALKS: N ☐ E ☐ S ☐ W ☐ FLAT ☒ HILLY ☐ FILL ☐
 MORTAR JOINTS CRACKED: YES ☒ NO ☐ WATER PRESSURE: HIGH ☐ LOW ☐ MED ☐
 WATER: CITY ☐ WELL ☐ OTHER ☐ WATER QUALITY: CLEAR ☐ MILKY ☐ RUSTY ☐
 HOUSE FACES: N ☐ E ☐ S ☐ W ☐ BASEMENT: YES ☐ NO ☐

DRAINAGE

GUTTERS: YES ☒ NO ☐ COMMENTS: NEW ADDITION ONLY
 DOWN SPOUT: YES ☒ NO ☐ COMMENTS: NEW ADDITION ONLY
 D.S. DRAINS TO: EARTH ☒ TROUGH ☐ CATCHBASIN ☐ SEWER ☐
 EROSION NEAR FOUNDATION WALL: YES ☐ NO ☒ COMMENTS:
 BUILDING SETTLED: YES ☒ NO ☐ COMMENTS: H.L. CRACKS IN FOUNDATION WALL

COMMENTS: INSPECTION COVERS EXTERIOR STRUCTURES AND WALLS OF THE WARE HOUSE.
MOSTLY COVERING THE SOUTH FACE. BUILDING SITS APPROXIMATELY 140 TO 150 FEET
FROM THE INITIAL PILE.

INSPECTOR: (b) (4) [REDACTED] REVIEWED BY:

KEY OF SYMBOLS:

CRACK -	SEPARATION - SEP	UNEVEL FLOORS - UF	PLASTER - P
NAIL POP - NP	BAD SEAM - BS	BENT WALL - BW	FIREBOARD - FB
HAIRLINE - HL	UNEVEL CEILING - UC	SHEETROCK - SR	CONCRETE - CONC.
BUILDING - BLD	CONCRETE BLOCK - CONC. BL	CARPET - C	CRAZING - CR
SUSPENDED TILE - ST	BRICK - BK	FOUNDATION - FDN	SPALLING - SPL
ACOUSTICAL TILE - AT	PANELING - PL	BROKEN GLASS - BG	PEELING PAINT - PP
VINYL TILE - VT	WALLPAPER - WP	WATER STAIN - WS	
WOOD - WD	CERAMIC TILE - CT	MORTAR JOINT SEPARATION - MJS	

SHEET NO. 2 OF 13
JOB NO.

Project Name: 12th St. Landfill
Location: Wilmington, DE
Job Number: 00151122

Photo Id: No. 1
Date 3/14/01



Overview of the warehouse (south face)

Photo Id: No. 2
Date 3/14/01



Obstructions in the area of garage door #1

Photo Id: No. 3

Date 3/14/01

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H.L. ~2 ft long extending from siding and 10 ft west of garage door #2 (pencil for scale)

Photo Id: No. 4

Date 3/14/01



Horizontal cracks extend the entire length of the garage ramp in front of garage door #2

Photo Id: No. 5

Date 3/14/01

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Siding damage above garage door #3

Photo Id: No. 6

Date 3/14/01



Obstructions east of garage door #4

Photo Id: No. 7

Date 3/14/01

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Step crack extending from the east corner of garage door #4

Photo Id: No. 8

Date 3/14/01



Horizontal crack below garage door #4 ~7 ft long and 1/8" thick

Photo Id: No. 9

Date 3/14/01

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Vertical hairline crack extending from the siding ~ 1½ ft long and 5 ft east of the stairs

Photo Id: No. 10

Date 3/14/01



Vertical hairline crack extending from the siding ~ 2 ft long and 8 ft east of the stairs

Photo Id: No. 11

Date 3/14/01

ORIGINAL



Vertical hairline crack extending from the siding ~ 2 ft long and 12 ft east of the stairs

Photo Id: No. 12

Date 3/14/01



Obstructions near the west of the addition

Photo Id: No. 13

Date 3/14/01

ORIGINAL



Step crack in concrete of addition (west face)

Photo Id: No. 14

Date 3/14/01



Horizontal mortar joint crack ~ 2 ft long. Also 3 vertical hairline cracks ~ 8" long

Photo Id: No. 15

Date 3/14/01

ORIGINAL



Overview of the southwest corner of the addition showing various vertical and horizontal hairline cracks

Photo Id: No. 16

Date 3/14/01



Mortar crack in the south face of the addition ~ 10 ft long

Photo Id: No. 17

Date 3/14/01

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Mortar crack in the south face of the addition extending the rest of the way across

Photo Id: No. 18

Date 3/14/01



Joint separation between concrete slab and stairs

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Photo Id: No. 19
Date 3/14/01



Unstable structures in the lot (west side near retaining wall)

Photo Id: No. 20
Date 3/14/01



Asphalt cracks at seismograph location #3

Photo Id: No. 21

Date 3/14/01

ORIGINAL



Vertical hairline crack ~2' long extending from the siding on the west face of the warehouse, 20 ft from the southwest corner (obstructed during pre-construction survey)

Photo Id: No. 22

Date 3/14/01



Vertical separation extending from the siding on the west face of the warehouse, 28 ft from the southwest corner (obstructed during pre-construction survey)